ONE WEEK RICE PRODUCTION TRAINING PROGRAM

HAMUNGAYA CENTER

for

Agricultural Training

Prepared by:

DEVELOPMENT STAFF

ILOILO PROVINCE

REPORT ON : ONE WEEK

RICE PRODUCTION TRAINING PROGRAM

Visayas Rice Experiment Station
Jaro, Iloilo City

April 27 - May 2, 1970

Prepared by:

Provincial Development Staff
Iloilo Province

INTRODUCTION

On March 2, 1970, the province of Iloilo initiated a proposal that on April 27 a Rice Production Training Program would be conducted at the Visayas Rice Experiment Station, Jaro, Iloilo City.

The proposal was sent to Mr. Vernon E. Ross of the International Rice Research Institute for consideration, evaluation and possible assistance.

Mr. Ross' reply of March 11 was concise and to the point: "I have contacted Mr. Roger Quyno of U.P.C.A. in regard to working out plans with U.P.C.A. and A.P.C. to supply the needed trainers to insure a good job being done."

On March 19, a team of six from the NFAC, APC/Manila, BPI, UPCA and IRRI arrived for a preliminary survey and conference regarding the training program. The morning was used for a general briefing on what had so far been planned, followed by a general discussion on the aims and guidelines for the training program. At this meeting, the theme for the entire week of training was agreed upon: the stressing of modern technology geared to local conditions. It was further agreed that as many locally available trainers would be used as possible. The minimum requirement for the trainers was set at six months intensive training by either IRRI or UPCA. Nine local people were recognized as meeting this requirement.

The afternoon was spent visiting "Hamuñgaya", the unofficial name for the Visayas Rice Experiment Station, where the training program would be conducted. After surveying the training site, the remainder of the time was spent contacting the heads of the local institutions, agencies and colleges from which the trainers would be drawn. All of these men pledged their total cooperation and support to the project.

When the day was done, initial preparations were complete for the training program on April 27.

AGRICULTURAL TRAINING

To insure a viable program, the province had to clarify or define certain concepts which it faced. The first of these concepts appeared rather obvious, but if overlooked or misunderstood it could easily cause the best laid plans to crumble. That was simply, "What

is In-Service Agricultural Training?" Stated concisely, it is a mechanism or program " . . . to keep farm advisers up-to-date in technical agricultural development". For the purposes of the province of Iloilo this definition was "localised" to say, a program whereby the APO and DPI Farm Management Technicians could acquire and/or review practical skills and basic theories about the Rice Production as well as the new and relevant results of research necessary to their jobs.

Once this basic definition had been reached, it was next necessary to decide if an agricultural training program was really needed in the province.

Agricultural training in and of itself is of little value. If training programs are conducted with little or no thought given to the overall picutre - or if a training program is not part of a greater or larger development scheme, then it may safely be concluded that the training program will be at most a very temporary success. If technicians are to be trained, they must be trained for a reason. When they complete the course, they must have a challenge awaiting them - and that challenge should be more than simply the goal of being a better Farm Management Technician.

There are many valid reasons for a training program. As an example of one such reason, we might offer the situation of this province.

Iloilo has embarked on an ambitious development program using the "pilot-barrio" approach. At present there are seven of these pilot barrios within the province. From each of these, one technician was selected for training. In addition to the pilot-barrios, there is an overall development plan for the province which stresses the obvious-agriculture, in particular, rice production. The remaining technicians were selected from the key rice producing towns of the province.

At the completion of their training, the technicians were provided with an immediate purpose (which would be present anyway) that is to spread the knowledge and reviewed skills they had recently acquired - but now the key element - to spread this knowledge within the context of the current development program as envisioned by the Provincial Development Council and its chairman, the Governor.

Another such purpose (and perhaps an easier one to attract support for) would be a program which envisions the exporting of rice either inter-island or internationally.

A third might be a program which seeks to stabilise the price of rice by increasing the supply - or in other words - a production

campaign.

The important consideration though is to try and design the training curriculum and approach so that it will lend itself easily to the support of a larger program.

Aside from the consideration of these first two parts of Agricultural In-Service Training, there is a third which had to be considered and then decided upon before the planning could proceed. That is, what type of in-service training was best for the technicians?

Time was the critical factor. Due to a limited budget, the program could not exceed six days. Thus, we had to determine what method of teaching could best accomplish our objectives in such a short time.

The Rice Research Institute in Los Baños has been in the business of training for several years. The trainees they graduate are respected for the knowledge and skills they are able to pick up during the IRRI training courses. Since most of our trainers were trained by IRRI, it was decided that if possible the Institute style should be adapted locally.

The style of training used in Los Baños was developed according to the educational principle that, ". . . we retain approximately 10 per-cent of what we read, 20 per-cent of what we hear and 30 per-cent of what we see. But we remember approximately 50 % of what we both see and hear. Further, we retain approximately 70 % of what we say and 90 % of what we do and say." (1) A program designed to allow the trainees to both do and say the course content would consequently have the most impact. The latter requisite for the highest retention level is met through frequent discussion, oral review and the encouragement of questions during lecture. The former requisite is taken care of with practical field work programmed to coincide with and compliment the preceeding lecture.

When these guidelines had been established, that is when training had been defined in the local context, when it had been established that the province was not simply training for the sake of training and when the style or method of training had been decided on, the administrators of the program could then take the next steps =

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(1) "The Communication Process And Its Relationship to Agriculture and Economic Development," Vernon E. Ross, IRRI Saturday Seminar, December 20, 1969.

selecting the group to be trained, then determining the actual size of the training class.

The term extension personnel encompasses a number of different job types. For most systems, the types are usually four: the administrator, the supervisors, the subject matter specialists and the farm advisers = generally known as the Farm Management Technicians.

"Of these four groups of extension personnel, the farm adviser is the key person. All others are simply to assist him to do the job that is required of him."(2) There is the temptation at times for an agency to send anyone through training. But for the purposes of this type of program, anyone but a Farm Adviser is wasting the time and the money of the province. Another facet of the selecting process is the necessity of having a homogeneous group. Those who have had previous training should be separated from those who have not. Though this is not always possible, it is a worthy standard for which to strive. This should include the mixing of farmers or other non-professional people with technicians. The two groups were combined in the Iloilo program and the results were not good. In the presence of technicians, farmers tend not to take part. Furthermore, their proficiency in technical terminology in generally = though not always = below that of the technician.

And so for this type of program, it was decided that the group should be the farm management technicians = preferably with similar training backgrounds. Ten farmers were included = two from each of the five pilot barrio projects of the Provincial Development Council. But once again, this should probably not be repeated.

Finally, the size of the group was determined. "For the sake of convenience in discussion, the size of each group should be kept small. In any case, it should not exceed 40."(3) To enable the province to train the maximum number of technicians for the minimum investment, the figure 40 was adopted. However, it was generally agreed that the group was somewhat large. Twenty-five to thirty trainees would have been an ideal number.

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(2) Extension Education for Agricultural and Rural Development, G. W. Chang, FAO-United Nations, Bangkok, Thailand, March 1963.

(3) "Ibid."

NEEDS OF THE TRAINING PROGRAM

There were two types of needs of the Iloilo Training Program. The first might be called the "support=needs" and the second would be called the "physical needs" or more concisely stated, the facilities.

In the history of Iloilo province, there have been many training programs conducted. However, these programs have had a distinct shortcoming in that few, if any, of them have been joint ventures or programs which have combined the resources and expertise of various agencies. Too often, the programs have been of the either = or variety. That is, either the APC or the DPI, seldom both. So to take full advantage of the combined assets of the various agencies concerned with agricultural development, all these agencies were urged to contribute their total support to this program. This was accomplished in Iloilo under the existing organization of the Development Council. The agencies had already grown accustomed to working together by their participation in the pilot projects.

On the same hand, the provincial government must be willing to give its support. This is true for several reasons. In the Iloilo program, the funds came from the National Food and Agriculture Council. The Governor of the province is the logical official to deal on the national level. Also, the Governor of Iloilo is the Chairman of the Development Council. Without his full support, the support of the Council could hardly be expected. And finally, as mentioned earlier, the training was designed to fit into a larger plan. This plan was, and usually is, of the Governor's creation.

The third "support=need" is financing. Funds were available for this project through the National Food and Agriculture Council. They have just initiated a program, under the direction of Vice= President Lopez, which will provide for the funding of two agricultural training programs per province per year. Due to it being late in the fiscal year, the province had to rely on the National Government to fund the program. The NFAC proved most receptive to our proposal and the promise of money was delivered to the province two weeks after the request was made.

The second type of "needs" that had to be met were the physical needs or facility requirements of the training program. These can be listed as follows:

1. Lodging (Separate accommodations for Trainers)
2. Cafeteria Facilities (Make=shift)
3. Lecture Room (Well=ventilated and lighted)

4. Electricity (for slide projector)
5. Movie Projector (through PACD)
6. Field Work Area (irrigated)
7. Transportation (full-time)
8. Medical care (in case of accident or injury)

These were the basic necessities for the training program. Since there is no existing permanent training facility in the Western Visayas (only one in the entire Philippines excluding IRRI and UPCA) most of the facilities mentioned above were made temporarily for the program only. The province was very fortunate in having the Visayas Rice Experiment Station as the site. The facilities there were rather easily converted into a training site. Fortunately, the date of the program did not conflict with the rather full schedule of the station.

ORGANIZATION

The first matter of concern is organizing the program was who should do the training. It was decided at the preliminary conference on March 19 that local personnel should be utilized as much as possible. A list of potential trainers was compiled, using the minimum standard of six months training in Rice Production at either UPCA or IRRI. Fortunately, the list totalled nine. However, had we not been so lucky, the NFAC had assured us that UPCA or IRRI trained people would have been made available as needed.

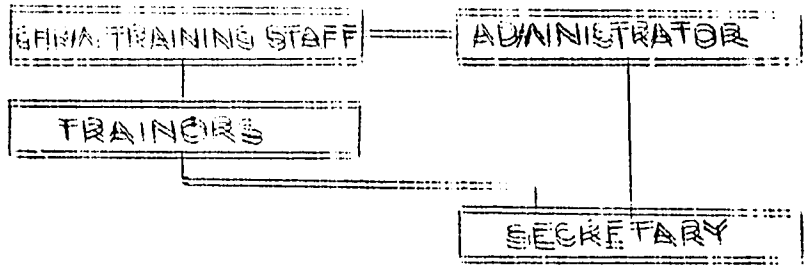
With nine rice production specialists in the province already, we assumed that it would not be necessary to call additional trainers from Manila or Los Baños. But the trainees reflected dissatisfaction with some of the trainors whom they believed to be working or teaching subjects other than their specialties. To a degree, this was true. It was felt that this reaction on the part of the trainees could have been avoided by either calling in additional assistance or conducting an image building campaign for the benefit of the trainors. In this sense, technicians are a hard lot to please. But the solution lay in the organisational approach that is, making sure the trainees were properly prepared and properly informed about the course, its philosophy and its instructors. Had this been done, the trainees would have viewed the instructors in a different and perhaps more favorable light.

In selecting the trainors = and granted the field for selection is limited in most areas = a general rule needs to be followed: the shorter the course length, the more expert the instructors must be.

A list of the trainors and a brief description of their qualifications is located in the appendix. This should serve as a

guide to the type of people suited for this type of training program.

The second matter dealing with organisation is the formulation of the program staff. The basic organisational design used in the Iloilo program was as follows:



This simple design is diagrammed only to stress the relationship that must exist between the Chairman of the Training Staff = and for that matter, all of the trainers and the administrator. There should be an equal division of authority = on matters concerning the administration of the program the administrator was and should be solely in charge. But on matters regarding training, the trainers must have the final word = and they must know that they have the final word. This will not only put the responsibility where it belongs, but will also lighten the work load for both parties considerably.

Secretary is used in the singular sense. However, it was necessary to use several back=up typists due to the heavy work load. At least one secretary should be assigned to the training site for the entire week. She must be quite capable for in large measure, the success or failure of a training program may rest with her ability to do much work quickly and with few mistakes.

Next the administrator must find a reliable and able cook to prepare the three daily meals and two meriendas. In the Iloilo program, we were fortunate in having the services of the wife of the regional director of the BPI. She lives at the Rice Experiment Station with her husband and this made the entire make=shift operation less difficult. Whoever is selected as the chef must be capable of taking criticism = once again, technicians are a hard lot to please in certain respects. But if the chef has a sense of humor as ours did (and hopefully still does) most problems can be easily solved.

The administrator may want to create a special committee to take responsibility for the closing or "graduation" exercises. This is a very important part of the overall program for it can give the needed stimulus to the technicians as they depart from the training site and prepare to re-enter their assignments. Thus, the person selected for this job should be reliable, familiar with the political situation of the province and generally close to the program so he will know along which lines to direct the ceremonies. His duties could be expanded to include the various printing jobs that need to be done, i.e. Certificates of Graduation, Appreciation Certificates and the graduation program.

At this point, we would like to suggest that time not be spent on an opening program. During a one-week course, time is the one element in short supply. The intensity of the courses' first day will serve as an appropriate introduction to what lies ahead. Perhaps, thirty minutes can be spent making the appropriate introductions and enumerating basic rules of procedure such as "no going out at night after classes", but any more than this will only use up time that should be spent on other activities.

This completes the basic organization for the one-week course. It was used successfully at Mamungaya, but different administrators may want to use different approaches. Whatever the approach is, it should be suited to the end result of an efficient, streamlined program.

WORKSHOP

It was agreed at the March 19 conference to gather all trainers and "imported" specialists to a three-day workshop on April 20 - 22 at the Visayas Rice Experiment Station (the site of the actual training program).

The overall purpose of the workshop was to design the curriculum and develop the philosophy of training to be used the following week in the program. But the workshop was also expected to enable the trainers to develop the strategy for carrying out the one-week training program.

More specifically, the workshop hoped to accomplish the following:

1. Formulate more definite purposes and objectives for the one-week course on April 27.

2. Identify the broad and specific subject matter content for training.

3. Identify topic/activity instructors and other personnel or agency assignments.

4. Articulate the specific instructional goals for each specific topic.

5. Identify teaching materials to be prepared such as:

   a) visual aids, charts, slides, specimens, photographs, etc..

   b) equipment and facilities.

   c) handouts, pamphlets, books, samples, etc..

6. Obtain agreement and committment on the broad approach to be used by each instructor in handling the group in their teaching of the trainees.

7. Prepare the training schedule: time, topic/activity and instructor assignments.

8. Obtain agreement on the mechanics of coordination before and during training.

SCHEDULE OF WORKSHOP:

To accomplish these eight specific objectives, the following schedule was prepared for the three-day session:

April 20 (Monday)

8:00 - 9:00 a.m. = Arrival of participants and assignment of accommodation arrangements.

9:00 a.m. = Introduction of each of the participants (Name plates to be provided by organizers).

= Explanation of Iloilo Provincial Development Council, its rationale, objectives and programs - Provincial Governor Norada.

= Briefing on the purposes, objectives, expectations and procedures of the workshop - Resource person.

= Tour of laboratory and field

training facilities = Superintendent, Visayas Rice Experiment Station.

12:00 noon = Lunch

1:00 p.m. = Discussion of problem situation in Iloilo concerning the production of rice: economics, marketing system, production technicians and agency's action programs.

= Formulation of purpose and objectives of the one-week training program.

= Identification of subject matter content and assignment of topic/activity instructors.

= Lecture: "Discussion on the preparation of a teaching plan" = Mr. Roger Guyno.

(Assignment: Each Instructor should prepare a teaching plan for the topics/activities assigned to him for presentation to the group the next day).

April 21 (Tuesday)

9:00 a.m. = Reporting of teaching plans by each instructor and followed by commentaries, criticisms or suggestions from the group. Moderator: Mr. Roger Guyno.

12:00 noon = Lunch

1:00 p.m. = Continuation of reporting.

4:30 p.m. = Film Showing: "Communication Feedback"

(As each topic was presented, the available slides on that topic were reviewed by the workshop participants).

April 22 (Wednesday)

8:00 a.m. = Summary of Tuesday's reporting.

= Preparation of training schedule.

= Dry run on prepared schedule.

= Lecture: "Principles of Adult Learning" = Mr. Quinton

11:30 a.m. = Comments and opinions about the workshop.

12:00 noon = Lunch

TO ACCOMPLISH THE OBJECTIVES:

Whenever a group of people are gathered together, especially if the group is composed of the representatives of different government agencies whose purposes are basically the same, it becomes of primary importance to see that inter-agency cooperation is encouraged and conversely, that inter-agency rivalry is discouraged.

An ideal situation was present in Iloilo. The various local government agencies involved had grown accustomed to the spirit of cooperation through their joint activities on the Provincial Development Council. As well, all of the participants were well qualified within their own fields. Thus, they all felt a degree of confidence in their abilities to do the job at hand. Furthermore, most of the group was somewhat surprised to find so many other provincial people who had undergone similar training to their own. And so though most of the participants were strangers to each other on the first day, a very strong sense of comraderie was developed by the third.

The programmed actions taken to encourage the development of group friendship were:

(1) Workshop was designed as a residential conference. Meals and lodging were provided by the PDC.

(2) Name plates were used to facilitate the "getting-acquainted" process.

(3) Meetings were very informal in nature - individual opinions were asked for often in the course of discussions.

Partially as a result of this, but mostly due to the maturity and dedication of the participants, the human factor worked in favor of the success of the program and the accomplishment of the objectives.

As mentioned earlier, the first specific objective of the workshop was to, "Formulate more definite purposes and objectives

for the one-week rice production training. . ." Following a group discussion on this topic, the following training objectives were enumerated:

"This training program is aimed at making the participants:

1) Regain "forgotten" a. knowledge of important concepts and knowledge in rice science and technology which are still scientifically sound and b. skills in identifying signs and symptoms associated with pests, diseases and nutrition and also in identifying different growth stages of pests.

2) Increase their knowledge in rice science and technology, particularly the new developments in varieties, weed control, post harvest processing and methods of planting (stand establishment).

3) Develop economic (farm management) orientation in whatever they are recommending to growers, and

4) Acquire ideas on how they can communicate effectively the subject matter of rice production and related subjects to their clientele.

It was decided by the group that these objectives could be accomplished during the one-week intensive course. The second objective of the workshop was to, "Identify the broad and specific subject matter content for the training".

Prior to working on this objective, a lengthy discussion was conducted on the particular problems Iloilo province is currently facing in rice production. This discussion yielded key factors that were stressed during the training program such as, methods and rationale used by the farmer for selecting varieties to plant; specific culture practices that must be followed if the HYV's are to achieve their potential; the economics of farming due to the recent "floating" of the peso and the factor of photoperiodism in seasonal varieties, i.e. BW-3. To answer these problem areas and to cover the enumerated purposes of the training program, the subject matter to be covered was decided on as follows:

Review of key concepts:

= Plant types and varietal improvements
= Seedbeds, stand establishment
= Calculation and calibration
= Fertilizer and fertilizer management
= Soil chemistry = availability of nutrients in upland and flooded soils
= Control of pests and diseases
= Water management

New developments:

- Varieties and their culture
- Stand establishment
- Post harvest processing
- Farm machinery
- Weed control
- Economic orientation

The trainers agreed that the new developments should be integrated as much as possible into the review so that the presentation will have more continuity.

The third objective was to, "Identify the topic/activity instructors and other personnel or agency assignments". This was done in the true spirit of volunteerism as each instructor was matched to the area of his specialization. However, in one or two instances, an instructor accepted a topic which was not within his specific field. In these instances, the other participants offered to assist in any way they could. The following list indicates the topic/activity and the corresponding trainer assigned to handle the lecture:

	TOPIC/ACTIVITY	INSTRUCTOR	NO. OF HOURS
1.	Water Use & Management	Mr. Simeon Leal	1.5
2.	Pump Irrigation	Mr. Simeon Leal	.5
3.	New Varieties & Their Culture	Mr. Baltasar Santuyo	1.0
4.	Major Pests of Rice & Their Control	Mr. Baltasar Santuyo	2.0
5.	Farm Machinery	Mr. Mike Martin	1.5
6.	Weeds & Their Control	Mr. Agapito Tauro	1.5
7.	Fertility; Fertilizer & Fertilizer Management	Mr. Agapito Tauro	1.0
8.	Chemistry of Flooded Soils	Miss Erlinda Jilosa	1.0
9.	Soils of Iloilo Province	Miss Pacita Gallego	1.0
10.	Stand Establishment	Mr. Siriaco Gibraltar	5.0
11.	Post Harvest Processing	Mr. Simeon Leal	1.0

12.	Major Diseases of Rice	Mr. Samuel Labaterio	2.0
13.	Rodent Control	Mr. Samuel Labaterio	1.0
14.	Calculation & Calibration	Mr. Sixto Jimenes	4.0
15.	Plant Types; Growth Stages & Photoperiodism	Mr. Rex Alocilja	1.5
16.	Economics of Rice Production	Mrs. Estrella Badiange	2.0
17.	Summing Up		4.0
18.	Benchmark Exercises		2.0
19.	Final Evaluation		2.0

As the list demonstrates, it was necessary to assign only one topic to a trainer who is not a permanent resident of the province. (Farm Machinery, assigned to Mr. Mike Martin, a Peace Corps Volunteer).

The fourth objective was to, "Articulate the specific instructional goals for each specific topic". This was accomplished by the completion of a lesson plan for the separate lectures by the trainers responsible for the topic. This lesson plan was then presented to the group and an evaluation of the plan was done. These lesson plans are located in the Appendix of this report.

The fifth objective was to, "Identify teaching materials to be prepared. . ." These are included in the lesson plans.

The sixth objective was to, "Obtain agreement and committment on the broad approach to be used by each instructor in the handling of the group as they teach the trainees". The broad approach agreed on centers around the word COMMUNICATION. Too often, training programs become a mere vehicle for a speaker to speak and a trainee to enjoy. The material covered may indeed be relevant and in fact critical to the effectiveness of the trainee. But because the training is geared to such vague concepts as "helping the trainee to learn about . . ." or enabling the trainee to "know about . . .", little is ever accomplished. The only significant goal of training should be behavioral change achieved by the articulation or communication of specific instructional objectives. To achieve this, we specify a goal, i.e. to enable the trainee to calculate the proper, recommended amount of an insecticide to be applied to a certain area of land. And when the training program is complete, if the trainee can perform the calculation, the program has been a success. If he cannot, then the

program has failed. Thus, this program was built around the concept of Communication through specific instructional objectives. To achieve this goal, the trainers have combined the concepts of communicating by hearing and seeing, and communication by doing. In short, a total communication intended to produce a behavioral - and thereby measurable response.

The seventh objective of the workshop was to, "Prepare a training schedule including the time, topic/activity and instructor assignment". The schedule was designed by the group to be responsive to the situation of the trainees and therefore, the schedule is intended to be flexible. The following outline is intended as a guide only:

FIRST DAY

8:00 - 9:00	Introduction
9:00 - 10:00	Overview of the program
10:00 - 12:00	Evaluation exercises
2:00 - 3:30	Plant types, growth stages, and photoperiodism - Rex Alocilja
3:30 - 4:30	New varieties and their culture - Baltasar Santuyo
4:30 - 5:15	Film showing

SECOND DAY

8:00 - 8:30	Review
8:30 - 10:00	Soils of Iloilo Province - Pacita Gallego
10:00 - 11:00	Chemistry of flooded soils - Erlinda Jilosa
11:00 - 12:00	Fertility, fertiliser and fertiliser management - Agapito Taure
2:00 - 3:30	Stand establishment - Ciriaco Gibraltar
3:30 - 5:00	Field work on stand establishment - Training Staff

5:00 - 5:30	Film showing

THIRD DAY

8:00 - 8:30	Review
8:30 - 10:00	Water use and management - Simeon Leal
10:00 - 10:30	Pump irrigation - Simeon Leal
10:30 - 12:00	Farm machinery - Mike Martin
2:00 - 3:30	Weeds and weed control - Agapito Taure
3:30 - 5:00	Field work on weeds and weed control - Training Staff
5:00 - 6:00	Rodent control - Samuel Labaterie

FOURTH DAY

8:00 - 8:30	Review
8:30 - 10:00	Major pests of rice and their control - Baltasar Santuyo
10:00 - 12:00	Major diseases of rice - Samuel Labaterie
2:00 - 3:30	Calculation and calibration - Sixto Jimenez
3:30 - 5:00	Field work on calculation and calibration - Training Staff
7:00 - 8:30	Panel discussion on "The Economics of Using Commercial Products on a Farm"

FIFTH DAY

8:00 - 8:30	Review
8:30 - 9:30	Post harvest processing - Simeon Leal
9:30 - 12:00	Economics of rice production - Estrella Dadiango

2:00 = 5:00 — Field work: Summing up week's activity = Training Staff

5:00 = 6:00 — Film showings (2)

SIXTH DAY

8:30 = 10:30 — Final evaluation exercises

10:30 = 11:00 — Evaluation of trainers = Training Coordinator

11:00 = 12:00 — Discussion of tests questions and answers = Training Staff

Graduation = Atty. Alex G. Umadhay
Master of Ceremonies

Vice Governor Padilla
Keynote Speaker

The eighth and final objective of the workshop was to, "Obtain agreement on the mechanics of coordination before and during training". The program is being coordinated by the Iloilo Provincial Development Staff. Administratively, the development staff is responsible for seeing that the program is a viable and well-supported activity. However, the responsibility for the actual training rest squarely on the shoulders of the trainers. All agreed that the program should function this way both for the sake of efficiency (trainors' time will not be wasted preparing the facilities, etc., for his lecture) and for the sake of effectiveness in that any decision made regarding how the training should be conducted, should be made by those responsible for the actual teaching.

And so we may conclude that the Workshop for Trainors successfully accomplished the objectives set forth on the first day. In that this was the first workshop of its type, the case may well be that the objectives listed were not sufficient to the task. But this can only be established after each training program is completed.

LECTURES GIVEN:

To enable the trainers to become more knowledgeable about certain aspects of the art of training, two lectures were presented to the group. The first was by Mr. Roger Cuyno of UPCA entitled, "The Teacher's Teaching Plan" and the second was by Mr. Vicente A. Quinton, also of UPCA's entitled, "Principles of Adult Education". Outlines of these lectures are attached in the appendix to this report.

PREPARATION FOR TRAINING PROGRAM

The purpose of scheduling the workshop four days ahead of the training program was to enable the administrator and especially the trainers to have time to work out last minute details and problems and to allow the trainers to polish their lesson plans.

During these four days, the remainder of printing and mimeographing was done. Also, the facilities such as beds, tables, etc. were moved out to the training site. It was generally a time for gathering loose ends and reviewing certain basic points of emphasis for the coming week. Some of thes points were:

1. Promptness of all meetings: The program must be tightly organized and run. The lack of time necessitates that each activity begin precisely at its appointed hour. If the lectures start late; if the schedule is not closely adhered to, then the trainees will respond accordingly to the lack of promptness.

2. The importance of food and meriendas having a good taste and appealing appearance: The workshop enabled the staff to sample the cuisine which would be served the coming week. The four-day lapse allowed time for minor adjustments to the menu.

3. Registration is of primary importance: Name tags should be prepared during these four days and when the first morning comes, all trainees should be encouraged to wear them - placing on them the name by which they wish to be called in large, legible letters.

4. Finally, at this time it would be good to consider the feasibility of having a panel discussion scheduled for one of the evening sessions. This was done in the Iloilo program and it proved to be very successful. The discussion involved the salesmen of the four major chemical companies in the area. As well, the credit manager of the ACA was invited as a participant. The topic to be discussed was, "The Economics of Using Commercial Products On The Farm, After 'Devaluation'".

Though the topic was not covered, the discussion was quite lively, going strong until 10:00 p.m. at which time it had to be ended, so the trainees could get some rest. Many problem areas emerged during the evening. A start was made on establishing a communication link between the two groups. And so for future programming, the panel discussion can easily be used as a method of attacking particular problems of the province.

The four days passed rapidly. It seemed like a lot of time for last minute preparations, but the amount of work to be done seemed to fit the time alloted to it. Whether it was the application of "Parkinson's Law" or whether there was in truth that much to be done is not wholly clear. Time must be used to its maximum extent. That much is clear.

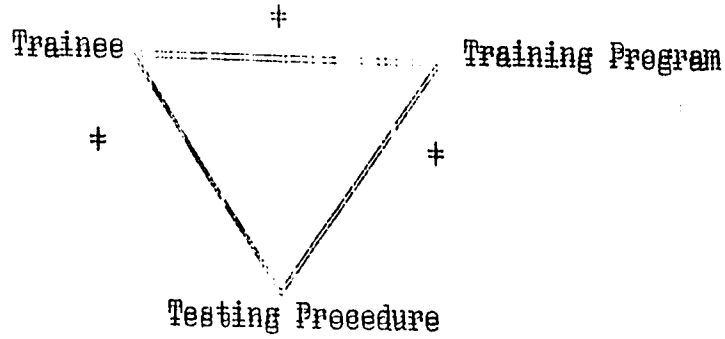
THE PROGRAM

The training went according to schedule. Only one or two minor adjustments were necessary and these adjustments were necessary because of things beyond our control. The program must be designed to be flexible, and as long as that is the case, then these last minute changes will not be a problem.

Several problems were encountered during the training which could perhaps have been avoided by the application or rather understanding of the "Theory of Balance". We mention this here as a sort of guide to future programming.

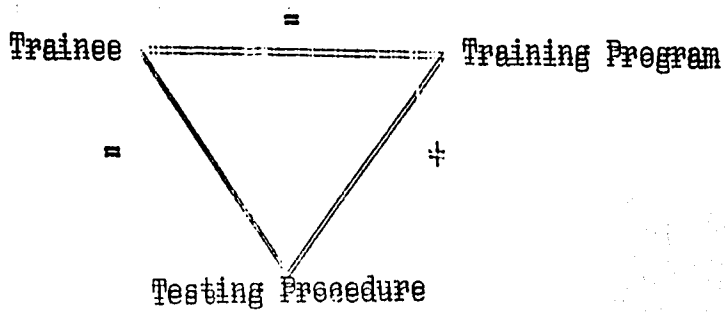
Basically, the theory says that as individuals, we maintain ourselves in a balanced position by the attitudes which we either develop naturally or are forced to develop concerning our relationships with things or persons that concern us.

Using the training program and testing procedure as an example, the trainee would be in a balanced position if he had a positive (+) relationship with the two factors in our example. This would be diagrammed as follows:



According to the theory, the trainee would also be in balance if he had a negative (=) relationship with the two factors in the example. In other words, assuming that the relationship between the training program and the testing procedure would remain positive and would therefore not change, the resulting situation would be two negatives and one positive, or as the theory tells us, a balanced position for the trainee. It would be diagrammed like

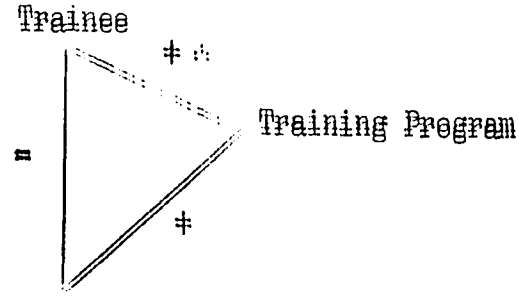
this:



And so we have the two primary situations by which balance for the trainee is achieved.

Now, let us consider the Iloilo program and what happened to the trainee's "balance" after the first practical examination.

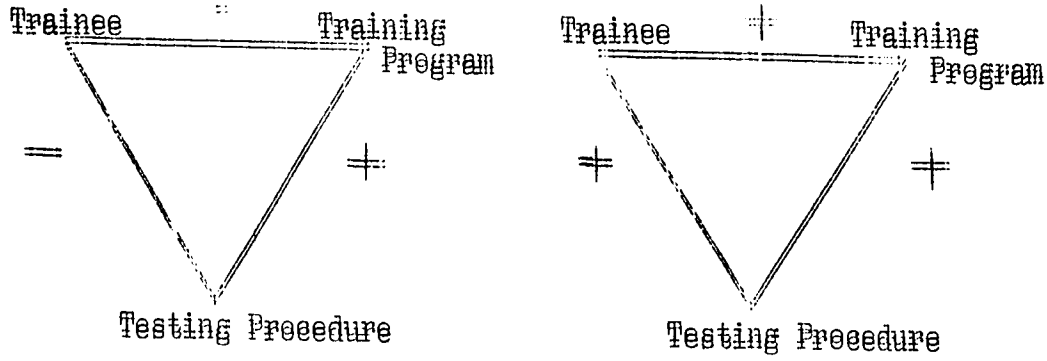
Most of the trainees had a positive = though not strongly positive=attitude toward the program in general. After the practical exam, nearly all the trainees developed a negative attitude toward the examination content and procedure. This was evidenced by comments like, "The specimens were not good", or "We never use these chemicals here". This could be considered a natural reaction though it was not necessary based on fact. And so a new situation was developed. The trainees still felt positive about the training program, but they now felt negatively about the testing procedure. Two positives and one negative, or an unbalanced situation for the trainee:



The Theory of Balance tells us that if change is to occur, then a man's situation must be thrown out of balance. But whether or not this change results in a good thing is dependent on how the man adjusts after the situation has become unbalanced.

The trainees in the Iloilo program could either develop a negative attitude toward the program (as some did) to restore balance = two negatives and a positive = or they could accept the results of the exam, and at the point = with three positives = the trainees begin to accept the challenges involved in learning and the program is free to proceed.

So the two situations that might occur after the administering of the practical exam would be diagrammed like this:



Both situations are in balance for the trainee, but the all-positive relationship is the more favorable for a successful training program.

To induce change on the part of the trainees, it is the responsibility of the administrator and trainers to see that the trainees are thrown out of balance. In a Rice Training Program, the initial practical exam provides an excellent vehicle for the accomplishment of this objective. But it is also the responsibility of the trainers and the administrator to guide the readjustment of the trainees to avoid the very possible negative reaction to the entire program.

In the Iloilo program, this was accomplished by stressing the "average" nature of the scores obtained by the trainees. This should not be done to the extent of excusing or rationalising the low scores - rather, it should be used as a method of showing that there is room for improvement - and most importantly - that significant improvement can be made by them and that such a significant improvement is the rule for the one-week course rather than the exception.

By keeping this idea in mind, and by following the basic design for the program developed in the workshop, the program can proceed and can truly begin to communicate "forgotten concepts" and some "new information and technology" relevant to the province.

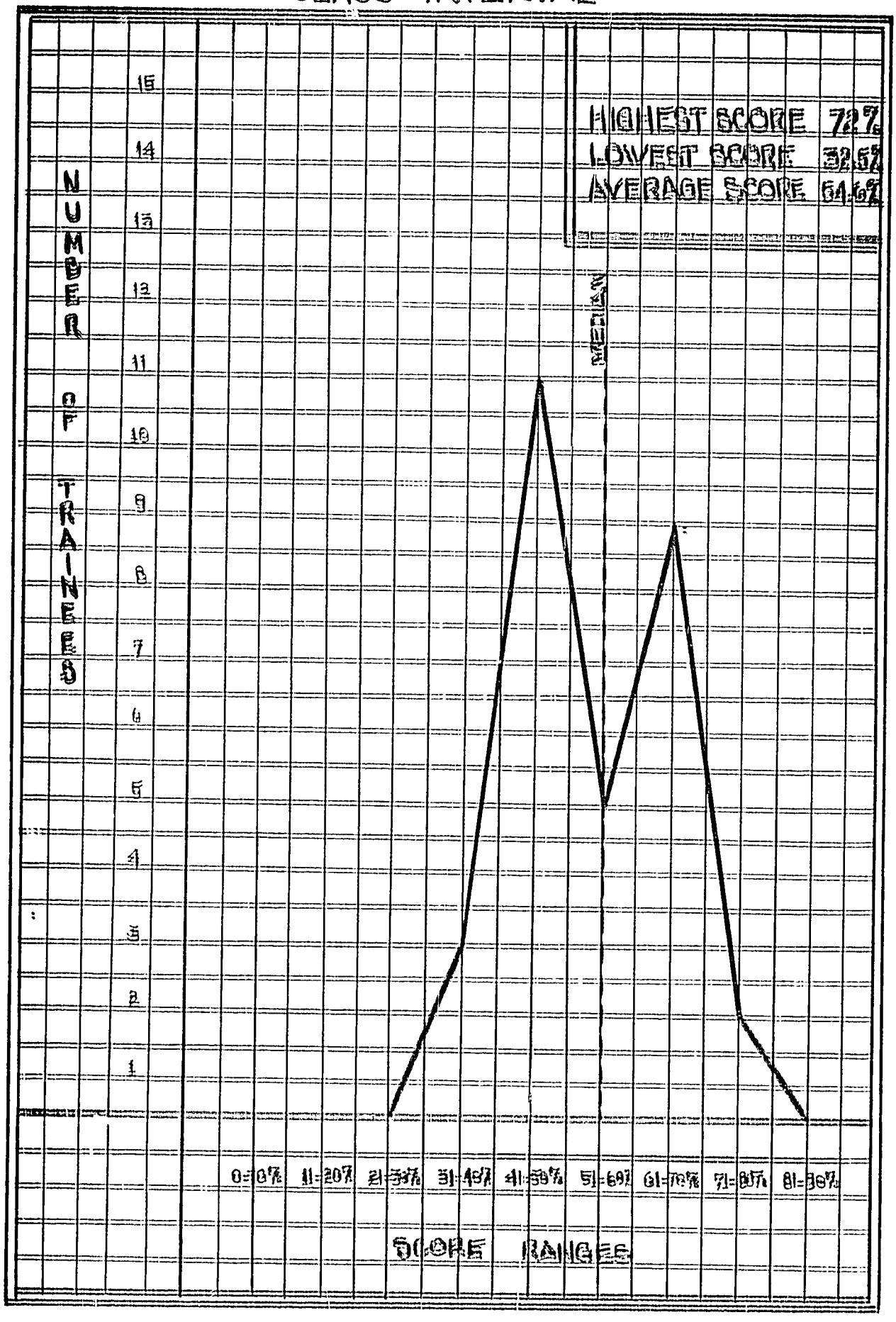
TESTING AND EVALUATION

The two graphs on the following pages illustrate the significant improvement made by the trainees on the practical examination. The formats for both the practical and written examinations can be obtained from either this office or from Mr. Roger Guyno at UPCA, College, Laguna.

These two instruments should be administered at the beginning

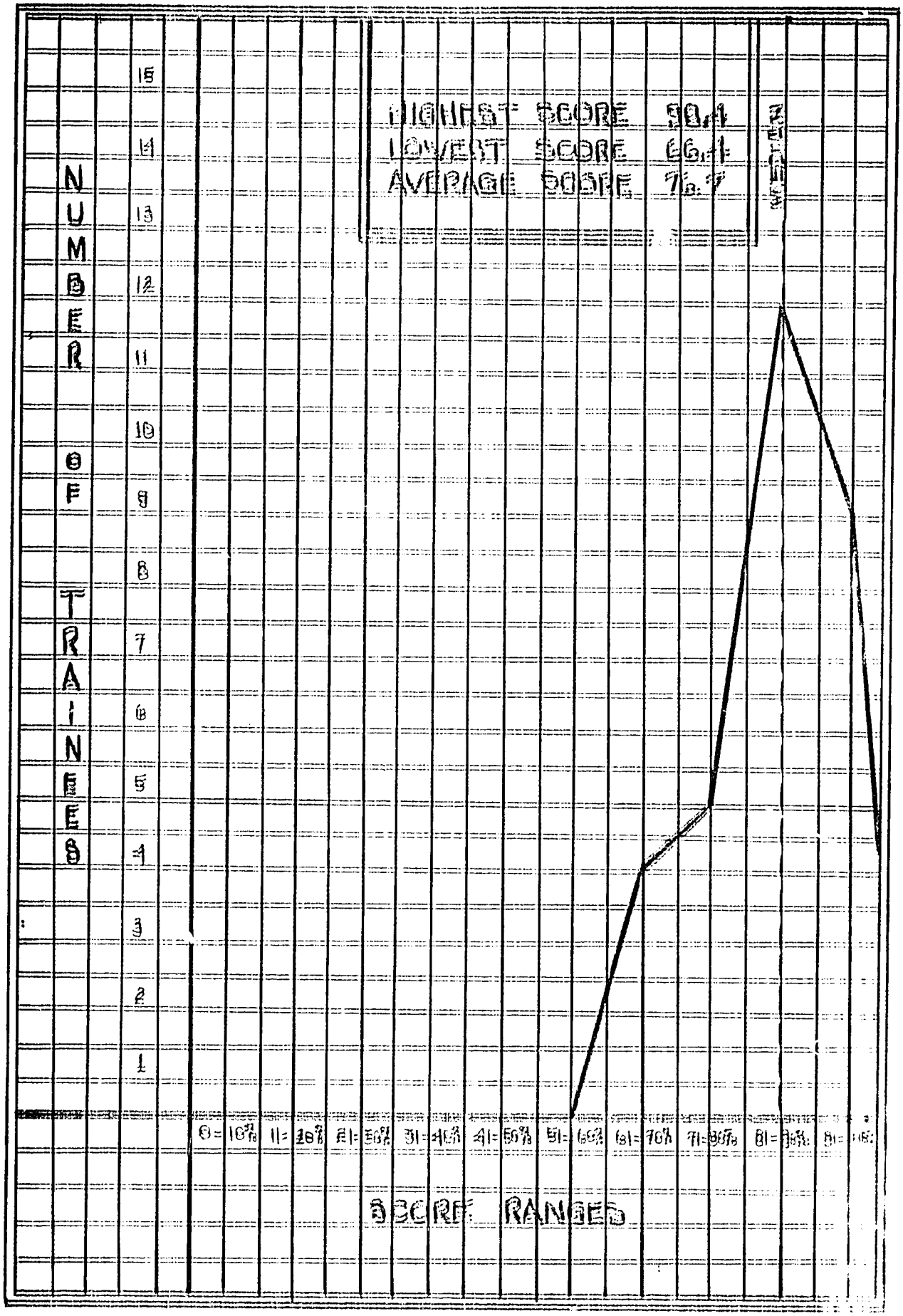
FIRST PRACTICAL EXAM

GLASS INTERVAL



SECOND PRACTICAL EXAM

CLASS INTERVAL



and then at the end of the course.

Several problems were encountered in the Iloilo program. First, the trainees attempted to make a group effort of the exercise. It had not been sufficiently stressed to them that such a group effort would invalidate the results of the tests and would thereby render the staff incapable of evaluating the success or failure of the program. Later, this was stressed, and from that point on, very little difficulty was encountered.

Another problem was that some of the trainees feared failure and resultantly wanted to use their notes on the written exam. For the same reason as above, this obviously could not be allowed. To prevent this, the administrator can stress that the course is not a pass/fail type of program; that the results will be used only as a guide in structuring or possibly altering the program. As trainees show strength in one area, the emphasis on that one area can be decreased allowing for a greater emphasis on subjects where the trainees may be weak. The practical and written examinations are the quickest and probably most reliable method of determining these areas for emphasis.

The procedure for testing should be the following if instruments similar to the ones used in Iloilo are employed:

Written Examination: 60 minutes

Practical Examination: 1 minute per station

The training group should be divided in half - with one half taking the practical exam while the other takes the written. When the written exam is finished, then the groups should switch.

The trainees were requested to number their answer sheets before the examination was begun. This saves confusion and time during the actual period of examination.

For the purposes of comparison, the following two tables are offered. These tables appeared in the leaflet, "Changing the Change Agent" prepared for IRRI by Dr. Francis C. Byrnes and Mr. William Golden. These tables illustrate the change in scores that usually occurs in a one-week program.

(1) Four Groups of APO and BPI Technicians trained for one week by IRRI graduates:

GROUP	BEFORE	AFTER
A	52 %	94 %
B	41 %	86 %
C	49 %	82 %
D	45 %	85 %

(2) Average of Seven Training Programs Conducted by IRRI for Extension Workers in the Philippines:

BEFORE	AFTER
57 %	92 %

The next table shows the change in scores at Hamuñgaya:

(3) Hamuñgaya Program Involving 30 APO and BPI Technicians Using Local Trainers:

BEFORE	AFTER
54 %	86 %

In an effort to approximate how well the program was received by the trainees, an evaluation was administered to them on the last day of the course. The form used is as follows: The trainees were asked to rate the course content on a scale of 1 to 5 with 1 being "very good" and 5 being "very poor". (In addition to this, a written evaluation was administered but since the results could not be tabulated, only the form questions are presented here).

Following are the averaged results of this evaluation:

I Plant Types, Growth Stages, Photoperiodism

Time	2.0
Interest	1.9
Clearness of Presentation	2.1
Newness of Information	2.3
Effectiveness of Visual Aids	2.0
Handling of Questions	2.4

II New Varieties and Their Culture

Time	2.1
Interest	2.1
Clearness of Presentation	2.3
Newness of Information	2.3
Effectiveness of Visual Aids	2.1
Handling of Questions	2.6

III Soils of Iloilo Province

Time	2.5
Interest	2.7
Clearness of Presentation	3.2
Newness of Information	2.7
Effectiveness of Visual Aids	2.7
Handling of Questions	2.2

IV Chemistry of Flooded Soils

Time	2.3
Interest	2.3
Clearness of Presentation	2.7
Newness of Information	2.4
Effectiveness of Visual Aids	2.6
Handling of Questions	2.8

V Stand Establishment

Time	2.1
Interest	2.2
Clearness of Presentation	2.4
Newness of Information	2.4
Effectiveness of Visual Aids	2.2
Handling of Questions	2.5

VI Water Use and Management

Time	2.3
Interest	2.5
Clearness of Presentation	3.0
Newness of Information	2.8
Effectiveness of Visual Aids	2.6
Handling of Questions	3.2

VII Pump Irrigation

Time	2.4
Interest	2.5

Clearness of Presentation	2.8
Newness of Information	2.8
Effectiveness of Visual Aids	2.6
Handling of Questions	2.1

VIII Farm Machinery

Time	2.1
Interest	2.0
Clearness of Presentation	2.3
Newness of Information	2.3
Effectiveness of Visual Aids	2.1
Handling of Questions	2.3

IX Rodent Control

Time	2.5
Interest	2.7
Clearness of Presentation	3.0
Newness of Information	3.1
Effectiveness of Visual Aids	2.9
Handling of Questions	3.2

X Major Pests of Rice and Their Control

Time	2.1
Interest	2.2
Clearness of Presentation	2.6
Newness of Information	2.7
Effectiveness of Visual Aids	2.2
Handling of Questions	2.7

XI Fertility; Fertiliser and Fertiliser Management

Time	1.8
Interest	1.8
Clearness of Presentation	1.8
Newness of Information	2.3
Effectiveness of Visual Aids	2.1
Handling of Questions	2.0

XII Weeds and Weed Control

Time	1.7
Interest	1.7
Clearness of Presentation	1.7
Newness of Information	1.9
Effectiveness of Visual Aids	1.8
Handling of Questions	1.8

XIII Major Diseases of Rice

Time	2.2
Interest	2.1
Clearness of Presentation	2.6
Newness of Information	2.6
Effectiveness of Visual Aids	2.2
Handling of Questions	2.8

XIV Calculation and Calibration

Time	2.3
Interest	2.4
Clearness of Presentation	2.9
Newness of Information	2.5
Effectiveness of Visual Aids	2.6
Handling of Questions	3.0

XV Post Harvest Processing

Time	2.4
Interest	2.4
Clearness of Presentation	2.6
Newness of Information	2.6
Effectiveness of Visual Aids	2.5
Handling of Questions	2.9

XVI Economics of Rice Production

Time	1.9
Interest	2.0
Clearness of Presentation	2.2
Newness of Information	2.2
Effectiveness of Visual Aids	2.4
Handling of Questions	2.3

XVII Summing Up Activity

Time	2.2
Interest	2.3
Clearness of Presentation	2.4
Newness of Information	2.2
Effectiveness of Visual Aids	2.8
Handling of Questions	2.4

Average Rating for Course _____ 2.3064

WRITTEN EVALUATION

1. What do you like most about this training program?

2. What do you dislike most about this training program?

3. What can you say about the following:

   (a) The training facilities of the Center

   (b) The accommodation (lodging) facilities at the Center

   (c) The food services at the Center

   (d) The location or site of the Center

   (e) The use of trainers recruited from different local agencies

   (f) The literature materials handed out

   (g) The duration of the training program

4. Do you feel you have benefited from this training program? If so, how?

FOLLOW UP

Most training programs end on the last day of their schedule. Perhaps, herein lies their biggest fault.

A one week training program of this type, must be viewed primarily as a refresher course. And why is the refresher course needed? Simply because it is easy to forget. This program - though it be a little different and we hope more efficient than the traditional type of provincial training - will be worthless without appropriate follow-up. By follow-up we mean several things. Primary among these is the need for a continuous program of retraining. All professional people whether they be doctors, lawyers, teachers or agriculturists must be retrained periodically. New technology is fast in coming in agriculture. We must continue to retrain to keep up. Old technology is easily forgotten or confused. We must continue training if we are to remember.

But there is another aspect to follow-up. The following suggestions are made - in addition to the ongoing program of retrain-

ing - which we feel will help make a Rice Training Program more effective.

1. See that the trainees are supplied with new information, bulletin, samples of chemicals, seeds, etc. as soon as possible.

2. Encourage chemical companies to use the trainees as cooperators in demonstration projects.

3. Recall the trainees after a period of three to six months for retesting so the degree of retention can be measured. After this is done, determine which areas remain trouble spots then locate all the available information and data on the subject and send it to them.

4. Maintain contact with the trainees after the course by occasional personal visits to their assignments - or by mail. In that way he will not feel so isolated and will be convinced that someone in the provincial government cares what happens in his town or barrio.

CONCLUSION

This is intended primarily as a report on the activities and conduct of the training program at the Visayas Rice Experiment Station. The suggestions are intended primarily as a guide for future training programs within this province. However, it is hoped that this report will be of use to people in other provinces who have plans to retrain their technicians. Many times in the preparation of this program, we longed for a model, or an example to follow. It is a much easier task to redesign than to be forced to create a design. Most of the time, the job produced by redesigning can be more effective than the original. We can learn from another's mistakes.

So, we have prepared this report with the hope that it will lessen the task of conducting the next retraining program on Rice Production.

APPENDIX

1. Information about Trainers
2. Budget for Training Program
3. Outline of two lectures:

   "The Teacher's Teaching Plan", Roger Guyne

   "Adult Education", Vicente Quinton
4. List of Handouts Given to Trainees
5. Lesson Plans

INFORMATION ON TRAINORS

1. MR. SIXTO JIMENEZ = working for C.P.U.
Rice Production Specialist = trained by IRRI for six months; Extension Specialist, trained by U.P.C.A.

2. MR. SAMUEL LABATORIO = working for C.P.U.
Rice Production and Extension Specialist, trained by U.P.C.A. for six months.

3. MR. REX ALCOILJA = working for C.P.U.
Rice Production and Extension Specialist, trained by IRRI for six months.

4. MR. AGAPITO TAURO = working for B.P.I.
Rice Production and Extension Specialist, trained by IRRI for two years; Specialist in Agronomy; trained by U.P.C.A. for two years.

5. MR. CIRIACO GIBRALTAR = working for A.P.C.
Rice Production and Applied Research = Communication Specialist, trained by IRRI for one year.

6. MRS. ESTRELLA BADIANGO = working for A.P.C.
Community Development Specialist, trained by U.P.C.A. for six months; Rice Production and Extension Specialist, trained in Japan as a Colombo Plan Participant.

7. MISS PACITA CALLEGO = working for the Bureau of Soils
Soil Fertility Specialist; received her training at Central Philippine University.

8. MISS ERLINDA JILOCA = working for the Bureau of Soils = will shortly be transferred to Baguio. She is a soil chemist as well as holding a Master's Degree in Public Administration.

9. MR. SIMEON LEAL = working for I.N.C.A.
Rice Production Specialist, trained by IRRI for six months.

10. MR. BALTAZAR SANTUYO = working for I.N.C.A.
Rice Production Specialist, trained by IRRI for six months.

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BUDGET FOR TRAINING PROGRAM

The following budget was calculated on the basis of a ₱3,000.00 grant from the NFAC for the expenses of this program:

I. Trainers

WORKSHOP EXPENSES

Food	₱ 360.00
Papers & Supplies	150.00
Miscellaneous (Gasoline, etc.)	30.00
	₱ 540.00

Total Expense for Trainers ₱ 540.00

II. SUPPLIES & EQUIPMENT

A.	Notebooks	₱ 32.00
B.	Graduation Certificates	25.00
C.	Rubber Stamp	5.00
D.	Mimeograph Paper	35.00
E.	Gasoline for Hauling	30.00

Total for Supplies & Equipment ₱ 127.00

III. FOOD FOR TRAINING PROGRAM (Meals and Meriendas) 1,000.00

IV. JOB SUPPORT AFTER TRAINING* 533.00

V. TOTAL EXPENSES ₱ 3,000.00

*During the course of the training program, it was decided that a major problem of the FFT's was job support in the form of communication materials such as new research data and information, information on new chemical products, new seed varieties for trial plantings, etc.. Thus, the decision was made to use whatever surplus funds we had for this purpose.

TEACHER'S TEACHING PLAN = Roger Guyne

I. WHY HAVE A PLAN:

A. Blueprint = determines what you want as end product of training. What do you want to be able to expect from the trainee?

B. Need plan due to lack of extensive experience in this type of training.

C. Also builds confidence in teacher.

D. Helps organise the areas of emphasis that need to be covered. Enables you to narrow down subjects to a few crucial areas. Gives sequence of presentation. Aids in allowing precise scheduling.

E. Aids in evaluation = can compare end result to method used in training = did the trainees learn what was necessary from your lectures, or should the approach be altered?

II. ORDER OF PLAN:

A. Title of Topic

B. Instructional Objectives

C. Specific Subject = data or information

D. Learning Experience = Presentation to be used = Techniques.

E. Evaluation Procedure = how do you plan to determine if trainees have understood your presentation? If you give an examination = what questions will you ask?

III. INSTRUCTIONAL OBJECTIVES:

A. DEFINITIONS:

1. Learning = a change in behavior

2. Teaching = directing or manipulating a change in behavior.

3. Behavior = observable, visible activity or performance = not so much an attitudinal change.

4. Terminal Behavior = what is his behavior at the end of the training.

5. Objectives = statement of intention of the teacher with reference to behavioral change.

B. CHOICE OF WORDING:

Wording must be meaningful so that the trainees would be capable of easily understanding the written objective = must be words that can be visualised:

vague	clear
understand	distinguish or describe
know	do
comprehend	communicate
appreciate	apply

C. RULES TO FOLLOW:

1. Specify the behavioral change.

Most important aspect is to specify the behavioral change by asking trainee to:

a. identify	f. enumerate
b. explain	g. differentiate
c. describe	h. calculate
d. list	i. compute
e. cite	j. compare

2. Specify the subject matter.

3. Specify the conditions under which the behavioral change will occur.

4. Indicate the standard level of performance.

ADULT EDUCATION = Vicente Quinton

I. Know your learners.

II. Decide on the type of learning outcome to promote.

III. Understand the basic principles of learning (teaching)

IV. Select and apply the teaching methods to use in promoting the type of learning outcomes desired.

V. Provide instructional follow up.

I. KNOWING PARTICULAR CONDITION OR SITUATION OF LEARNER

A. Know socio-economic conditions. Research tends to show that the rate of learning is related to socio-economic condition.

B. Psychological condition of learner = Many farmers are not used to attending classes and group meetings.

C. Physiological condition = as humans grow in age, certain physical conditions deteriorates = eyesight, hearing, etc.,

D. Vocational situation = level of living and literary.

II. WHAT TYPE OF OUTCOME IS DESIRED

A. Skills, practices

B. Theory

C. Change of attitude, beliefs and values

III. "YOU CANNOT PROMOTE GOOD LEARNING WITHOUT PROMOTING GOOD TEACHING"

Principles:

A. Learner should understand what he is to learn = teacher must clarify this.

B. Learning tasks should be related to immediate and real situation (problems) of learners. Adults want immediate results.

C. Related to real problems.

D. Favorable climate for learning is necessary. They should feel free to discuss = teacher should try to befriend the learner.

E. Learner should participate in learning process. He should demonstrate his knowledge before the class.

F. Should be an anticipation of reward with completion of learning task. If he is to adopt a certain practice, he should know the reward.

G. Discussion should be adjusted to level of learners.

H. Subject matter should be presented in most simple matter possible. Charts, drawings, illustrations (visual aids) can be used. Should utilise as many of the senses of the learner as possible.

I. Learner should be provided constant knowledge toward the completion of his goal. Ask questions to determine the learner understands what he is being taught.

IV. LEARNING OUTCOMES ARE KNOWLEDGE, SKILLS (PRACTICES), ATTITUDES, BELIEFS AND VALUES. THE OUTCOME MAY BE ACHIEVED BY:

A. knowledge = lecture, discussion

B. skills = demonstration, project practice

C. beliefs = attitudes = role playing (to eliminate animosity between landlord and tenant) a change of roles.

V. TO INSURE THAT WHAT HAS BEEN TAUGHT WILL BE USED

A. Home visits = allows learner to clarify certain doubts by personal discussion.

B. Printed matter = shows concern as well as allowing for dissemination of knowledge.

HANDOUTS FOR THE TRAINING PROGRAM

One of the most valuable aids for a technician in the field is an ample supply of literature for reference concerning the modern technology of rice production. This source of information becomes vital if you find yourself in the position of presenting new information during the one week training program. Only by having a sufficient supply of up-to-date, well-written, and complete information on a subject can the technician be expected to feel confident in discussing the subject.

The following is a listing of the handouts we prepared and distributed to the trainees at Hamuñgaya.

	Title	Source
1.	Insect Pests of Rice	M.D. Pathak, IRRI
2.	The IRRI Reporter	IRRI
	a. November, 1967	
	b. March-April, 1968	
	c. Jan - Feb, 1970	
3.	Cultural Practices for Profitable Rice Production In the Philippines	IRRI
4.	Changing the Change Agent	Dr. Francis C. Byrnes and William C. Colden, IRRI
5.	Flooded Soils	IRRI
6.	Economic Analysis Adds New Dimension to Experimental Data	IRRI
7.	The Philippines Recommends for Rice 1969	RCPCC
8.	Soils of Iloilo Province	Pacita Callege, Bureau of Soils, Iloilo City
9.	Some Important Considerations In the Drying and Storage of Palay	John Rawnsley, 1960, IRRI
10.	The Hand Tractor vs. The Carabao	C. Casem, IRRI
11.	Insect Pests of Rice	B. T. Santuyo, INCA, Lambunao Iloilo
12.	Geographic Distribution of Rice Stem Borer in the Philippines According to Climate Types	IRRI
13.	Pesticide Calculations	Jose I. Calderon, IRRI
14.	Some Conversion Factors	Dr. Burton T. Oñate, UPCA
15.	Weeds and Weed Control	Honorato C. Jeresa, VRES BPI, Iloilo Province
16.	Fertilizer and Fertilizer Application	A.C. Tauro, VRES, BPI, Iloilo Province

17.	Effect of Level of Nitrogen on the Grain Yields of Some Promising Selections	VRTS, BPI, Iloilo Province
18.	Some Dynamics of Communication	R. Guyno, UPCA
19.	Handbook of the Ecology of Ricefield Rats and Their Control By Chemical Methods	Jesus P. Sumañgil, BPI Manila
20.	Farm Machinery	Michael Martin, US Peace Corps Volunteer

LESSON PLANS
for
ONE WEEK COURSE
in
RICE PRODUCTION

1. Plant Types, Growth Stages and Photoperiodism
2. Improved Rice Varieties and Their Culture
3. Soils of Iloilo Province
4. Chemistry of Flooded Soils
5. Stand Establishment
6. Water Use and Management
7. Farm Machinery
8. Control of Rice Field Rats
9. Major Pests of Rice
10. Fertilizer and Fertilizer Application
11. Weeds and Their Control
12. Major Diseases of the Rice Plant
13. The Rice Blast Diseases
14. Calculation and Calibration
15. Basic Economics of Rice Production and Farm Management

TOPIC: Plant Types, Growth Stages and Photoperiodism

OBJECTIVES: To enable the trainees to be able to distinguish various plant types; to be able to list their growth stages and to be able to demonstrate the relationship between these two factors and photoperiodism by achieving a working knowledge of the photo-period concept.

I. PLANT TYPES:

A. Importance of Knowing the Different Plant Types, Their Growth Stages and Its Relation to Photoperiod.

1. Different plant types and their characteristics.

2. Plant types and amount of solar radiation.

3. Plant type and Nitrogen response.

B. Experimental yield data (charts, figures).

II. GROWTH STAGES:

A. Eleven growth stages of the rice plant

B. Growth phases of:

1. Short maturity variety

2. Long maturity variety

C. Growth duration as affected by environmental factors:

1. Photoperiod (daylength)

2. Temperature

a. Low

b. High

3. Nutrition - (with emphasis on Nitrogen)

a. Rate of N application

4. Season

a. amount of solar radiation

b. Time of planting

5. Cultural management

a. Direct seeded and transplanted.

b. Age of seedling at transplanting.

c. Dapog versus wetbed seedlings.

III. PHOTOPERIODISM:

A. Varietal response to photoperiod.

1. Photoperiod insensitive

2. Weakly photoperiod sensitive

3. Highly photoperiod sensitive

B. Components of photoperiod response:

1. Basic vegetative phase

2. Photoperiod sensitive phase

a. optimum photoperiod

b. critical photoperiod

Prepared by:

Mr. Rex B. Alcasilja

I. TOPIC: Improved Rice Varieties and Their Culture

II. INSTRUCTIONAL OBJECTIVES:

A. To enable the trainees describe the characteristics of new varieties/strains.

B. To enable the trainees cite or explain how the improved varieties/strains develop.

C. To enable the trainees explain the cultural requirement of improved varieties.

D. To enable the trainees enumerate the seedboard varieties, 1970, and their agronomic characteristics.

III. SUBJECT MATTER CONTENT:

A. Introduction.

B. Characteristics of improved varieties.

C. Advantages of improved varieties over the traditional varieties.

D. Parents of improved varieties:

1. Explain how they are developed.

2. Desirable characteristics of the parent varieties.

3. Number of generations.

E. Seedboard varieties, 1970 and some agronomic characteristics.

F. Standard cultural requirements:

1. Rate of fertiliser application.

2. Water management.

3. Control of insect pests and diseases.

IV. SUMMARY:

V. EVALUATION:

Prepared by:

Mr. Baltasar Santuyo

I. TOPIC: Soils of Iloilo Province

II. OBJECTIVES:

A. To identify the different types of soil of Iloilo Province best suited for lowland rice.

B. To differentiate one type from the other.

C. To show the distribution of different soil types.

III. SPECIFIC SUBJECT:

A. Soil types of different pilot barrios:

1. Aguiuan, Miagao, Iloilo = Alimodian Clay Loam

2. Quinagaringan, Passi, Iloilo = Alimodian Clay Loam

3. Guihaman, Leganes, Iloilo = Sta. Rita Clay

4. Gabilauan, Barotac Nuevo, Iloilo = Sta. Rita Clay Loam

5. Progreso, Ajuy, Iloilo = Barotac Loam

B. Information and Data:

1. Sta. Rita Clay

a. Area

b. Productivity rating

c. Characteristics

d. Origin and formation

e. Chemical analysis

f. Fertiliser recommendation

2. Alimodian Clay Loam

a. Area

b. Productivity rating

c. Characteristics

d. Origin and formation

e. Chemical analysis

f. Fertiliser recommendation

3. Barotac Loam

a. Area

b. Productivity rating

c. Characteristics

d. Origin and formation

e. Chemical analysis

f. Fertiliser recommendation

IV. PRESENTATION:

A. Soil maps

B. Soil samples

C. Difference of soils from one another

1. climate

2. vegetation

3. parent materials

4. condition of slope

V. EVALUATION:

A. Describe Sta. Rita Clay

B. Differentiate Sta. Rita Clay from Sta. Rita Clay Loam.

C. What is the soil type of Progreso, Ajuy, Iloilo?

Prepared by:

Miss Pacita Callego

I. TOPIC: Chemistry of Flooded Soils

II. INSTRUCTIONAL OBJECTIVES:

A. To illustrate the profile of a flooded soil.

B. To illustrate the profile of an aerated soil.

C. To differentiate flooded soil from aerated soil.

D. To describe or explain what happens when a soil is flooded.

E. To cite the benefits of flooding.

F. To cite how added nitrogen is lost in the soil and how to minimise these losses.

III. SPECIFIC SUBJECT, DATA, OR INFORMATION:

A. Profile of a flooded soil.

1. oxidised zone.

2. reduced zone.

B. Profile of an aerated soil.

1. no reduced zone

C. What happens when a soil is flooded?

1. Physical changes

2. Chemical changes

3. Biological changes

D. How added nitrogen is lost from the soil and how to minimise these losses.

1. Denitrification

2. Leaching

3. Volatilisation

B. Effects of flooding.

1. Effect on PH

2. Effect on P

3. Effect on K

4. Effect on Fe, Mn, Si, Ca, and Mg.

IV. PRESENTATION:

A. Assign readings.

B. Lecture using profiles of flooded and aerated soils in a 2-liter capacity beakers and chart for visual aids.

V. EVALUATION:

Prepared by:

Miss Erlinda L. Jilocca

1/

I. TOPIC: Weeds and Their Control

II. OBJECTIVES:

A. Weeds = The trainees will be able to:

1. Define weeds.

2. Describe how weeds inflict damage on crops with respect to:

a. Sunlight

b. Nutrient supply

c. Occurence of pests and diseases

d. Water supply

e. Carbon dioxide

3. Identify lowland and upland weeds according to their broad classification.

B. Methods of Weed Control = The trainees will be able to:

1. List and explain the methods of controlling weeds with special emphasis on lowland condition.

2. Distinguished control, prevention and eradication.

3. Explain the principles of chemical weed control; why weedicides kill weeds but not the rice plant.

4. List and explain the time of chemical treatment with respect to the crop or with respect to the weeds.

5. Enumerate how herbicides are applied and explain each.

6. Differentiate systemic herbicides from contact herbicides; selective herbicides and non-selective herbicides.

7. Enumerate the requirements for effective use of herbicides to control rice weeds.

8. List, according to their efficiency effectiveness, physical forms and relative cost, the recommended herbicides for controlling weeds in lowland and upland soils including rate and time of application. Emphasise on granular herbicides. Advantages of granular herbicides.

9. List of precautionary measures to be observed in the use of herbicides.

III. PRESENTATION:

A. Weeds

1. Define weeds; give example: corn in a rice plantation or vice versa.

2. Weed competition

a. slides with tall weeds and short rice plants (sunlight)

b. experimental data of nutrient uptake of weeds (nutrient)

c. list of weeds acting as hosts of pests and diseases (hosts of pests and diseases)

d. experimental data on moisture uptake of weeds (moisture)

e. carbon dioxide data on competition

3. Identification, define and give actual specimens.

a. sedges

b. grasses

c. broadleaves

Identify which species give serious competition, why? Present data as evidence.

D. Methods of weed control

1. Define control, prevention and eradication.

2. Lists of methods and examples of each with emphasis on chemical weed control.

   a. cultural

   b. biological

   c. mechanical

   d. chemical

3. Principles of chemical weed control.

   a. uniform application (no more or no less)

   b. right timing

   c. correct dosage

   Selectivity is based on:

   a. morphological

   b. absorption

   c. translocation

   d. physiological

   Example: Growing point of rice and monochoria vaginales differs.

4. Time of chemical treatment:

   a. Pre-emergence to weeds on rice plants.

   b. Post - emergence to weeds on rice plants.

   c. Pre-emergence to weeds - post-emergence to rice plant or vice versa.

5. How herbicides are applied to plants.

   a. spot

   b. band

   c. broadcast

   d. directed spray

6. Difference:

   a. Systemic herbicides = herbicides which translocate and has chronic effect.

   b. Contact herbicides = do not translocate; kill parts of plant that come in contact with; has acute toxicity.

   c. Selective = kill some plants but do not kill others.

   d. Non-selective = kill plants that come in contact with.

7. Effective use of herbicides:

   a. Rate of herbicides or dosage

   b. Timing

   c. Uniformity

8. Experimental data and farmer's practice data on herbicides.

9. Measures for the use of herbicides.

   a. clean the sprayer

   b. uniform application

   c. timing

   d. correct dosage

   e. spraying direction

   f. washing (affected parts of body to avoid toxic accumulation.

IV. EVALUATION:

A. Define weeds and explain example given.

B. Define control; differentiate it from prevention and eradication.

C. Differentiate systemic herbicides from contact and selective herbicides from non-selective herbicides.

D. What are the factors to be observed for effective use of herbicides?

E. What are the three (3) broad classification of weeds; define each and give examples of each kind.

Prepared by:

Mr. Agapito C. Tauro

I. TOPIC: Major Diseases of the Rice Plant

II. OBJECTIVES: The trainees will be able to:

A. Explain the meaning of a disease.

B. Classify the common diseases of the rice plant and how they are disseminated.

C. Explain the effect of virus diseases on the rice plant and on growth and yield in general.

D. Cite the kinds of virus diseases that are most destructive at different growth stages of the plant.

E. Identify the characteristics of the symptoms of the rice viruses under field condition or when shown on slides and specimens.

F. Describe the transmission of the virus diseases.

G. Cite the insect vector or carrier of these virus diseases.

H. List some practical measures to control virus diseases.

III. INTRODUCTION:

The term disease will mean the impairment of plants' usefulness due chiefly to infectious living agents that are capable of reproducing or multiplying and undergoing a regular cycle of development.

Such causal-agents of diseases in plant may be grouped under virus, bacteria, fungi, parasitic flowering plants, and nematodes. They may be distributed from one area into another by water, wind, insects, animals and man.

A. Effect of Virus Diseases on the Rice Plants:

1. diverse abnormalities in general:

a. growth

b. tillering

c. leaf symptoms

d. other characteristics

2. Symptoms

a. External

b. Internal

1) Production of inclusion bodies: Its example.

2) Alteration of cell structure and contents: Its example.

B. Growth and yield of infected plants:

1. Growth

a. plant height

b. number of leaves and tillers

c. days of maturity

d. ratoon growth

2. Yield

3. Grain quality

C. Characteristics of the symptoms:

1. Grassy stunt virus

a. severe stunting

b. excessive tillering

c. general yellowing = appearance of rusty spotted leaves; narrow and erect.

2. Tungro virus

a. moderate stunting

b. slightly reduced tillering

c. dull yellow to yellow orange

d. rusty spots in older leaves

e. mottles the young leaves

3. Orange leaf virus

   a. inconspicuous stunting

   b. reduced tillering

   c. discoloration of leaves from bright yellow to orange, starting from the tip of each leaf

   d. longitudinal rolling of leaves followed by death of plant in advanced stage

4. Yellow dwarf

   a. severe stunting

   b. excessive tillering

   c. general yellowing of the leaves from pale green to pale yellow

   d. narrow and drooping leaves

(Note: Explained with the use of slides).

D. The Insect Vector and Its Transmission Period and Distribution:

1. Tungro = Green leafhopper (Nephotettix Impecticeps)

   a. Minimum acquisition feeding period = 30 minutes

   b. Incubation period of insect = less than two hours

   c. Retention period of insect = less than five hours

   d. Minimum inoculation feeding period = four minutes

   e. Incubation period in the plant = 6-9 days

   f. Distribution = Philippines, Malaysia, Thailand and India

2. Grassy stunt = brown planthoppers (Nilaparvata Lugens).

   a. Minimum acquisition feeding period = 30 minutes

   b. Incubation period of insect = 6-20 days (time of transmitting virus to new plants).

   c. Retention period of insect = more than 30 days; persistent; remains infectious of having acquired the virus.

   d. Minimum inoculation feeding period = 5 minutes; no symptom but there is already a virus.

   e. Incubation period in the plant = 10-19 days

   f. Distribution = Ceylon, India and Philippines

3. Orange leaf = Zigzag leafhopper (Inasuma dorsalis)

   a. Minimum acquisition feeding period = 5 hours

   b. Incubation period of insect = 2-6 days; time of transmitting the virus to new plants

   c. Retention period of insects = persistent; remains infectious throughout its life cycle

   d. Minimum inoculation feeding period = 6 hours; no symptom but there is already a virus

   e. Incubation period in the plant = 13-15 days

   f. Distribution = Ceylon, Thailand and Philippines

4. Yellow dwarf = Green leafhopper (Nephotettix Impeetiseps)

a. Minimum acquisition feeding period = 10 minutes

b. Incubation period of insect = 20-37 days; time of transmitting virus to new plants

c. Retention period of insect = more than 54 days; remains infectious having acquired the virus

d. Minimum inoculation feeding period = 3 minutes; the virus was already transmitted to plant

e. Incubation period in the plant = 57 days

f. Distribution = Ceylon, Taiwan, Thailand, India, Malaysia, and Philippines.

(Note: Explained with the use of the chart).

E. Control measures of virus diseases:

1. Rogue infected plants (careful handling)

2. Plant resistant varieties

3. Grow crops from seeds which were not attacked by virus

4. Control insect infestation

5. Control weeds in dikes and field

Prepared by:

Mr. Samuel Labatorio

I. TOPIC: The Rice Blast Diseases

II. OBJECTIVES: The trainees will be able to:

A. Identify a rice blast under field condition.

B. Describe the characteristics of the symptoms of the blast disease in the leaf, stem, and panicle.

C. List some control measures of rice blast disease.

III. INTRODUCTION:

A. Symptoms:

1. leaves

2. nodes

3. panicles

4. roots

(Shown also with the use of slide).

B. The Causal Organism (Piricularia Oryzae)

C. Disease Cycle and Pre-disposing factors.

D. Control

Prepared by:

Mr. Samuel Labaterio

I. TOPIC: Calculation and Calibration

II. IMPORTANCE IN RICE PRODUCTION:

III. CALCULATION:

A. Formulation

1. Dust

2. Emulsifiable Concentrates

3. Wettable Powders

4. Granules

B. Dilution

1. Recommendation based on percentage concentration.

2. Recommendation based on active ingredient

C. Agricultural Chemicals

1. Fertiliser

2. Herbicides

3. Insecticides

4. Fungicides

D. Computation

1. Formulas

IV. CALIBRATION:

A. Self-Calibration

1. Application of fertilisers, insecticides, fungicides and herbicides.

2. Sprayer Calibration

Prepared by:

Mr. Sixto Jimenez, Jr.

THE TEACHER'S TEACHING PLAN ON ECONOMICS

I. TOPIC: Economics in Rice Production

II. OBJECTIVES:

A. To be able to explain the concepts of farm plans and budget.

1. Definitionship of farm plan and budget
2. The Relationship between Plan and Budget
3. The Uses of Farm Plan
4. Kinds of farm plans and budgets
   a. Complete Budget
   b. Partial Budget (to be emphasised to the trainees)

B. To discuss the specific samples of partial budget.

1. Nitrogen Level
   a. 30 kg. vs. no fertiliser
   b. 30 kg. vs. 60 kg.
   c. 60 kg. vs. 90 kg.
2. Weed Control
   a. Hand Weeding vs. No Weeding
   b. Hand Weeding vs. Rotary Weeder
   c. Rotary Weeder vs. Chemical

C. To let the trainees practice their own partial budget.

1. 0-0-0 = 50 cavans/ha.
2. 70-0-0 vs. 0-0-0 = 84 cavans/ha.
3. 70-60-0 vs. 70-0-0 = 102 cavans/ha.
4. 70-60-60 vs. 70-60-0 = 97 cavans/ha.

III. PRESENTATION:

A. Lecture method

B. Write on board

C. Use of charts

D. Handouts from I.R.R.I.

E. Grouping of trainees on making partial budget

F. Reporting on partial budget made by the group

G. Open discussion

IV. EVALUATION:

Submission of farm partial budget by each trainee.

Prepared by:

Mrs. Estrella L. A. Badiange

5FE

I. TOPIC: Stand Establishment

II. OBJECTIVES:

A. Trainee should be able to differentiate wet bed from dapog by describing the general procedure.

B. To cite the advantages and disadvantages of wet bed, dapog and direct seeding.

C. Trainee should be able to successfully prepare and grow three ways of preparing dapog as follows:

1. Growing dapog on cement floor.

2. Growing dapog in the field by using banana leaves to cover the surface of the bed.

3. Growing dapog in the field by using plastic to cover the surface of the bed.

D. Trainee should be able to transplant properly dapog seedlings in the field.

E. Cite some studies showing the difference in performance of plants grown from dapog, wet bed and direct seeding.

III. SUBJECT CONTENT, INFORMATION AND DATA:

A. Seedlings

1. Age of seedlings

2. Area

3. Care of seedlings

4. Ease in transplanting

B. Advantages and disadvantages of seedlings

1. Dapog

2. Wet bed

3. Broadcast

C. Water supply

1. Seedlings up to 15 days do not get nutrients from the cotyledon.

2. Germinating medium is not necessary for dapog seedling.

3. Trainee should be grouped into three (3) sub-groups.

a. Growing dapog in cement floor

b. Growing dapog in the field by using banana leaves to cover the surface of the bed.

c. Growing dapog in the field by using plastic to cover the surface of the bed. (Each group to work on each system).

D. Transplanting

1. Number of seedlings per hill.

2. How to handle dapog seedlings.

3. Quality of land preparation.

F. Advantages of using recommended practice

1. Difference in yield.

2. Difference in maturity.

3. Difference in incidence of pests.

4. Difference in incidence of disease.

5. Difference in weed problem.

IV. LEARNING EXPERIENCE AND PRESENTATION:

A. Lecture, slide, actual field observation

B. Lecture, slide

C. Divide group into three (3) sub-groups. Each assigned to work on the three system or method.

D. Demonstration field training of actual experience.

V. EVALUATION PROCEDURE:

Prepared by:

Mr. Cirilace G. Gibraltar

I. TITLE: Water Use and Management

II. INSTRUCTIONAL OBJECTIVES: To develop an effective ability:

A. To define irrigation and other common terms about irrigation of rice.

B. To differentiate continuous flooding from the intermittent flooding method of irrigation.

C. To tell the farmers the right depth of water for rice and why such depth is recommended.

D. To explain the right time when to start irrigation, including the water requirement of rice.

E. To enumerate how water is lost in the field.

F. To control the different factors that contribute to water losses in the field.

G. To tell the farmers the right time when to have terminal drainage and reasons for drainage.

III. SPECIFIC SUBJECT AREA:

A. Importance of irrigation

B. Classes of irrigation

C. Irrigation of rice

1. Methods of irrigation

2. Time of irrigation

3. Depth of water and water requirement of rice

4. Factors affecting water losses and their control

5. Avoiding soil reduction plant injury in the practice of irrigation

6. Soil and water temperature control

D. Terminal drainage = When to have terminal drainage and its importance

E. Data on research conducted concerning water use and management

IV. TEACHING PROCEDURE:

A. Introduce discussion WHY the problem of irrigation was chosen as one of the subject matter areas for group consideration, and cite at least two important purposes.

B. Review of irrigation status in the Philippines, particularly here in the province of Iloilo.

C. Write on the board the classes of irrigation and methods of irrigating rice in the Philippines.

D. Explain the following after writing on the board:

1. Time of irrigation

2. Depth of water and water requirement of rice

3. Factors affecting water losses and their control

4. Size of levee

E. Explain how to reduce plant injury in the practice of irrigation.

F. Explain the importance of water and temperature control

G. Using slide, pictorial drawing, handout, etc., show the trainees the following: repair of levee, use of pump irrigation, etc..

H. Explain the importance of terminal drainage.

V. EVALUATION:

Prepared by:

Mr. Simeon L. Leal

I. TOPIC: Farm Machinery

II. INSTRUCTIONAL OBJECTIVES:

A. To give basic information to trainees about the utilisation of simple farm machinery.

B. To let the trainees analyse the factors involved in the purchase, care, use and management of a given implement of farm machinery. Because of time limitation, application of theory will be limited to one simple farm machine = a thresher.

III. INSTRUCTIONAL TECHNIQUES:

A. The trainees will be asked to help evaluate the problems involved in using farm machinery.

IV. INSTRUCTIONAL AIDS:

A. Actual thresher present in the classroom.

B. Handout on lecture notes and paper on hand tractor vs. carabao.

V. LECTURE CONTENT:

A. Problems involving initial expenses, repair and maintenance.

B. Problems involving most efficient use of machinery

C. Problems involving socio-economic factors or why labor is often against machinery.

Prepared by:

Mr. Mike Martin

I. TOPIC: Control of Rice Field Rats

II. OBJECTIVES: The trainees will be able to:

A. Identify the different rat species.

B. Describe the physical characteristics of rats.

C. Explain and understand the life history of rats.

D. Explain the habits and behavior of the rats.

E. Describe and explain food preferences and feeding habits.

F. Describe and explain the harborage preferences and borrowing habits.

G. List some practical measures to control rats.

III. INTRODUCTION:

A. Species

B. Physical Characteristics

C. Life History

D. Habits and Behavior

E. Food Preferences and Feeding Habits

F. Harborage Preferences and Burrowing Habits

G. Control

1. Chemical control

a. Acute or fast acting poisons

b. Chronic or slow acting poisons

2. Mechanical control

3. Fumigative control

Prepared by:

Mr. Samuel Labateria

I. TOPIC: Major Pests of Rice

II. INSTRUCTIONAL OBJECTIVES:

A. To enable the trainees realise the impertanse of pest control.

B. To point out the extent of damage of insect pests if not controlled.

C. To enable the trainees cite or explain the situation of the occurence of pests.

D. To develop the ability and skill of the trainees to identify the different insect pests of rice.

E. To enable the trainees cite the recommended control measures.

III. TEACHING PROCEDURES:

A. Preparation

1. Introduction.

2. Importance of the subject matter.

B. Presentation

1. State the economic significance of controlling insect pests.

2. Cite results of research studies conducted regarding pest control.

C. Application

1. Using lecture method, present charts and slides in the course of the discussion.

2. Subject matter contents:

a. Definition of terms:

1. Pest

2. Insect community

3. Insect population

4. Population density

5. Ecosystem

6. Population equilibrium

7. Threshhold of economic injury

b. Factors that favor the occurence of pests.

c. Condition that induces the outbreak of pests.

d. Different species of stemborers, their life cycle and characteristics.

e. Nature of damage of stemborers.

f. Different species of leafhoppers and planthoppers.

g. Minor insect pests of rice.

h. Damage inflicted by minor pests of rice.

i. Control measures of stemborers and planthoppers.

1. Different methods of controlling insect pests:

a. Physical control

b. Cultural control

c. Ecological control

d. Mechanical control

e. Chemical control

(Note: Slides must be shown after the lecture and follows the giving of handouts).

IV. EVALUATION:

A. Give at least five questions:

1. What are the different species of stemborers?

2. What are their distinguishing characteris-

ties?

3. What are the symptoms of stemborers?

4. What are the different minor insect pests of rice?

5. What are the different control measures of stemborers?

Prepared by:

Mr. Baltasar Santuyo

I. TOPIC: Fertiliser and Fertiliser Application

II. OBJECTIVES: The trainees will be able to =

A. Define fertiliser.

B. Explain why there is a need of applying fertiliser.

C. Enumerate the major and minor elements needed by the rice plants.

D. Enumerate and explain the functions of N P K.

E. Differentiate the two types of fertiliser; examples of each and advantages and disadvantages.

F. Identify and describe the forms of fertiliser.

G. Differentiate and explain why basal fertiliser is incorporated into the soil and why top dressing is done at panicle initiation.

H. List the factors affecting response to nitrogen.

I. List and explain the most significant findings of the research on fertiliser rate, types of fertiliser and methods of placement of fertiliser in the soil. (Specify dry and wet season rates for IR20 and IR22).

III. APPROACH (PRESENTATION)

A. Define fertiliser = Give examples.

B. Actual plants with N P K and without N P K. Present data on grain yield, plant height and tiller number.

C. List major elements and minor elements. Present data on nutrient uptake to support classification.

D. Types of fertiliser = organic and inorganic. Example of each and discuss the advantages and disadvantages of each.

E. Forms of fertiliser: $N=NH_4^+$, NO_3^-, NO_2^-, $P=P_2O_5$ and $K=H_2O$.

F. Sources of fertiliser: N, P, and K.

G. Factors affecting response to N:

1. Variety

2. Season

3. Spacing

4. Lodging

H. Basal application of N = needed for early establishment, root development, tillering and early vegetative stage. Panicle initiation = N grains' formation and its stage; rice plants where all available N is needed.

Discuss denitrification and transformation of N to NH_4^+ forms under oxidised zone of the soil.

I. Data on N response experiments:

1. Data on longer term fertility experiments.

2. Data on methods of placements.

3. Data on types of fertiliser.

IV. EVALUATION:

A. Define fertiliser.

B. What are the advantages of inorganic fertiliser over the organic types of fertiliser?

C. Explain why fertiliser application is done at last harrowing and at panicle initiation.

D. How N is lost in the soil?

E. Enumerate and explain factors affecting response to Nitrogen.

Prepared by:

Mr. Agapito C. Taure